

LISTING OF CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. **(Original)** A method of orienting a spherical object, comprising:
 acquiring an image of a spherical object at an imaging station;
 analyzing the image with a first computer to determine an orientation analysis;
 transferring the object from the imaging station to orienting stations using a transfer mechanism; and
 orienting the object to a predetermined orientation according to the orientation analysis;
 wherein the orienting stations comprise first, second, and third stations each rotating the object about a single axis; the first, second, and third stations collectively orienting the object by rotation about axes that are alternately perpendicular.
2. **(Original)** The method of claim 1 wherein the object is a golf ball.
3. **(Original)** The method of claim 1 wherein the transfer mechanism comprises a walking beam or a rotary indexer.
4. **(Original)** The method of claim 2 wherein the rotary indexer is a cam-driven mechanical indexer.
5. **(Canceled)**
6. **(Original)** The method of claim 1 wherein the transfer mechanism has a vacuum cup to hold the object.
7. **(Original)** The method of claim 1 wherein the transfer mechanism has a gripping member to hold the object.

8. **(Original)** The method of claim 1 wherein the transfer mechanism comprises a compliant object carrier that is movable translationally and substantially immovable rotationally.

9. **(Original)** The method of claim 8 wherein the compliant object carrier comprises a compliant bellows coupling.

10. **(Original)** The method of claim 8 wherein a holder cup has an internal cup diameter approximately equal to an outside diameter of the object, and the object helps to guide the object carrier to the rotation cup.

11. **(Original)** The method of claim 8 wherein a shot pin helps to guide the object carrier into alignment with a holder cup.

12. **(Canceled)**

13. **(Original)** The method of claim 1 wherein a driven cup clamps onto, and rotates, the object after the transfer mechanism indexes the object.

14. **(Original)** The method of claim 1 wherein at least one of the orienting stations is at least partially mounted onto the transfer mechanism.

15. **(Original)** The method of claim 14 wherein the second station comprises a spindle mounted onto the transfer mechanism.

16. **(Original)** The method of claim 15 wherein a motor mounted on the transfer mechanism rotates the spindle to rotate the object.

17. **(Original)** The method of claim 16 further comprising acquiring an image of the object as the motor rotates the object.

18. **(Original)** The method of claim 15 further comprising driving the spindle with a friction wheel to rotate the object.
19. **(Original)** The method of claim 15 further comprising magnetically coupling a motor onto the spindle to rotate the object.
20. **(Canceled)**
21. **(Original)** The method of claim 15 further comprising sliding the spindle into an engaged position wherein a motor is coupled to the spindle as the spindle slides into the engaged position.
22. **(Original)** The method of claim 21 wherein the spindle engages the motor through a blade and slot mechanism while the transfer mechanism indexes the object.
23. **(Original)** The method of claim 1 further comprising alternating a flow of data from the imaging station to the first computer with a flow of data from the imaging station to a second computer.
24. **(Original)** The method of claim 1 further comprising sending image data from the first computer to a second computer that computes and communicates the analysis to the orienting stations.
25. **(Original)** The method of claim 1 wherein two of the three alternate perpendicular axes are vertical.
26. **(Canceled)** The method of claim 1 wherein two of the three alternate perpendicular axes are horizontal.
27. **(Original)** A method of orienting a spherical object, comprising:
acquiring an image of a spherical object at an imaging station;

analyzing the image with a first computer to determine an analysis;
transferring the object from the imaging station to orienting stations using a transfer mechanism; and
orienting the object to a predetermined orientation according to the analysis.

28. **(Original)** The method of claim 27 wherein the transfer mechanism comprises a walking beam or a rotary indexer.

29. **(Original)** The method according to claim 27 wherein the transfer mechanism comprises a compliant object carrier that is movable translationally and substantially immovable rotationally.

30. **(Original)** The method according to claim 27 wherein a holder cup has an internal cup diameter approximately equal to an outside diameter of the object, wherein the object helps to guide the object carrier to the holder cup.

31. **(Original)** The method according to claim 27 wherein at least one of the orienting stations is at least partially mounted onto the transfer mechanism.

32. **(Original)** The method of claim 31 wherein the at least one of the orienting stations comprises a spindle mounted onto the transfer mechanism.

33. **(Original)** The method according to claim 27 wherein the imaging station is an image acquisition and object orienting station that comprises a gimbaled mechanism that rotates the object about three perpendicular axes without a transfer from one station to another station between the rotations.

34. **(Original)** The method according to claim 27
wherein the object is transferred to an orienting station that has a gimbaled mechanism that rotates the object about three perpendicular axes without a transfer from one station to another station between the rotations.
35. **(Original)** The method of claim 34 wherein an automated transfer mechanism transfers the object to the orienting station.
36. **(Original)** An orienter for a spherical object, comprising:
an imaging station having an image detector;
a computer that can determine an image analysis;
three orienting stations that operably receive the analysis and can rotate the object about perpendicular axes; and
a transfer mechanism having a compliant object carrier that is movable translationally and substantially immovable rotationally;
wherein the detector operably images an object, the computer operably determines the image analysis, and the three stations operate to orient the object according to the analysis.
37. **(Original)** The orienter of claim 36 wherein the object is a golf ball.
38. **(Original)** The orienter of claim 36 wherein the transfer mechanism comprises a walking beam or a rotary indexer.
39. **(Original)** The orienter of claim 36 wherein a holder cup having an internal cup diameter approximately equal to an outside diameter of the object can guide the object carrier to the holder cup.
40. **(Original)** The orienter of claim 36 wherein the at least one of the orienting stations is at least partially mounted onto the transfer mechanism.

41. **(Original)** The orienter of claim 40 wherein the at least one of the orienting stations comprises a spindle mounted onto the transfer mechanism.

42. **(Original)** The orienter of claim 36 wherein the orienting stations comprises a plurality of indexing wheels.

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